5-27-1994

CropWatch No. 94-9, May 27, 1994

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CROP WATCH

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University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

Wheat disease state update

A recent survey of wheat in western Nebraska, eastern Wyoming and northeast Colorado showed only a moderate level of disease activity. Background infections of wheat streak mosaic, barley yellow dwarf and Cephalosporium stripe were found in many of the fields surveyed. At this time, it doesn't appear that wheat streak mosaic is going to affect wheat production in western Nebraska. Cephalosporium stripe was moderately severe in the outer edges of some fields but decreased further into the field.

Growers should be alert to freeze injury, as most fields surveyed showed leaf tip damage. Growers should examine the growing points (head)in these fields by splitting stems lengthwise with a sharp knife. A normal, uninjured growing point is bright green and turgid; freeze injury causes it to become white or brown and water-soaked. A limited examination of growing points in some fields revealed a fairly high incidence of injured growing points.

In addition to injured growing points, some plants are showing signs of stem injury. Both main stems and early tillers that had begun to joint at the time of the freeze began to yellow up to two weeks after the freeze. At first glance these plants appear to be suffering from crown and root rot or wheat streak mosaic virus, but inspection of the lower nodes (joints) reveals stem discoloration and weakness. Apparently, vascular transport of water and/or nutrients was blocked by the extent of the tissue damage. When rapid growth resumed, the injured stems were unable to keep up with the demands of rapid growth. Given reasonable weather in June and July, these tillers should compensate for a good part of the damage done by the freeze. Growers should randomly sample plants within fields to determine the extent of injury. Nebraska Cooperative Extension Circular EC94-132-S, "Freeze Injury to Nebraska Wheat" provides guidelines for examining freeze injured plants.

Wheat leaf rust is beginning to develop in south central Kansas. It has not been detected in Nebraska, but will probably make an appearance in the next few weeks. Weekly surveys will be conducted to monitor wheat leaf rust development in Nebraska.

John E. Watkins
Extension Plant Pathologist
Drew J. Lyon
Extension Dryland Cropping Systems Specialist

Inside

Some areas seeing alfalfa weevil problems

Reports from Dawson County and the Panhandle during the week of May 16th indicated that economic infestations of the alfalfa weevil were present and that insecticide treatments were going to be applied to reduce further losses. No economic infestations have yet been reported from the eastern portion of the state, although weevil development seems to be delayed in the east and serious problems may simply be a few days or weeks away.

Alfalfa growers across the state are encouraged to continue monitoring their fields for the presence of weevils and their damage. As alfalfa nears the bud or flowering stages, early harvest may be a better option than insecticide treatment. Following harvest, fields should be scouted periodically to determine that regrowth is occurring normally. If not, examine for the presence of weevil adults that may be feeding on developing buds and shoots.

Additional information regarding the management of alfalfa weevils is available in EC93-1511, *Insect Management Guide for Alfalfa, Soybeans, Wheat, Range, and Pasture,* and G73-30, *The Alfalfa Weevil,* both of which are available at your University of Nebraska Extension Office.

Steve Danielson
Extension Entomologist

Bean leaf beetles are showing up on soybeans

Bean leaf beetles have emerged from overwintering sites and will begin to colonize soybean fields soon after seedling emergence.

Because seedlings are small, these beetles, and the defoliation they cause, are easily observed. Recent research at the University of Nebraska, however, has indicated soybeans can tolerate seemingly high levels of early infestation without sustaining significant economic loss.

New economic thresholds for bean leaf beetle on seedling soybean are now available and are presented in the tables at right. As you can see, these economic threshold densities are quite high and seldom experienced, although not impossible, in Nebraska. Upon emergence, early planted soybeans (before mid-May) seem to act as a magnet to overwintered bean leaf beetles. Monitoring of these early planted soybean fields should begin soon after the plants emerge.

If treatment is justified, several insecticides are available for controlling bean leaf beetle. Consult the current edition of EC 1511, *Insect Management Guide for Nebraska Alfalfa, Soybean, Wheat, Range and Pasture,* for information on insecticides registered for bean leaf beetle control.

Tom Hunt
Ext. Entomology Technologist

Economic thresholds for bean leaf beetle on seedling soybean. The VC stage soybeans have only the unifoliolate leaves unrolled, and V1 stage soybeans have the unifoliolate and the first trifoliolate leaves unrolled. For beetles/row-ft, multiply by 7.6.

a) VC Economic Thresholds (beetles per plant)

	Pest-management costs, $/a			
Crop value, $/bu	6.00	8.00	10.00	12.00
5.00	3.2	4.3	5.4	6.2
6.00	2.7	3.6	4.5	5.2
7.00	2.7	3.1	3.8	4.4
8.00	2.0	2.6	3.3	4.0

b) V1 Economic Thresholds (beetles per plant)

	Pest-management costs, $/a			
Crop value, $/bu	6.00	8.00	10.00	12.00
5.00	4.4	5.8	7.3	8.7
6.00	3.6	4.8	6.1	7.3
7.00	3.1	4.2	5.2	6.2
8.00	2.7	3.6	4.5	5.4

Correction

Please make the following correction on Page 15 of EC94-1509, *Insect Management Guide for Nebraska Corn and Sorghum.* The use rate of Penncap-M for control of first generation European corn borers should be 2-4 pints (not quarts) per acre.

Bob Wright
Extension Entomologist
SCERC

CROP WATCH

Crop Watch is published from March through November by the University of Nebraska Institute of Agriculture and Natural Resources Communication and Computing Services, PO Box 830918, 108 Agricultural Communications Bldg., UNL, Lincoln, NE 68583-0918. To order a subscription or to change your address, write to *Crop Watch,* Box 830918, 108 Agricultural Communications Bldg. or call (402) 472-7981.

Lisa Brown Jasa, Editor

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Stalk borers feeding in corn in some counties

During the last week we have received several reports of common stalk borers feeding in corn in York, Seward and Clay counties. In some cases, damage has been widespread across the field, not restricted to the field borders, which is more common.

Common stalk borers are rather distinctive in appearance, with three white stripes on a background brownish-purple coloration. The two stripes on the side stop just behind the three pairs of true legs, then continue about half-way down the length of the caterpillar. Feeding damage by stalk borers may kill the growing plant if the caterpillar bores into the base of the stalk. Ragged feeding holes in the leaves may also be apparent if feeding starts in the whorl and then moves down into the stalk.

Stalk borer moths lay their eggs om grassy plants in the fall. Often these are fence rows, grass waterways or terraces bordering crop fields. These eggs hatch in late April or early May and larvae bore into the grasses or other weeds, such as ragweed, and begin feeding. As they get larger, or if the plants are mowed or burned down with herbicides, the stalk borers move into adjacent corn plants.

Last year many corn fields in south central and south eastern Nebraska were damaged by the severe wind storm of July, and grassy weeds developed throughout these fields. In these cases, eggs could have been laid throughout a field, rather than only at the edge. As these eggs hatched, thelarvae moved directly into corn and began feeding on seedling corn plants. Once stalk borers enter the whorl, they are difficult to control with insecticides.

In cases where stalk borers begin feeding on grassy weeds, or other vegetation in field edges, control is most effective if timed between 1400-1700 degree-days (base 41 F), which corresponds to first half of the period during which stalk borers migrate from weedy hosts into corn. Current data from Mead and Clay Center indicates we have accumulated about 1120 degree-days (base 40 F). Now would be the time to check field margins for the presence of stalk borers in the weeds or in corn plants on the field margin. If the infestation is restricted to the field margin, use a border treatment. Ambush 2E (6.4-12.8 oz per acre), Asana XL (5.8-9.6 oz per acre), Lorsban 4E (2-3 pints per acre) or Pounce 3.2EC (4-8 oz per acre) would be effective against migrating larvae.

Bob Wright
Extension Entomologist
South Central Research and Extension Center

June best month for woody plant control applications

June is the best time for foliar applications of most herbicides for woody plant control.

To achieve the best control, thoroughly cover foliage when plants are in full leaf and foliage is tender. Application later in the summer may result in lessened herbicide effect.

Several herbicides are available for woody plant control in pastures. These include 2,4-D, 2,4-DP, Crossbow, Banvel and some formulations of Tordon. In noncropland situations, Garlon, Krenite, Spike and Velpar also can be used for woody plant control. Krenite, however, should be applied in late summer or early fall.

John McNamara
Ext. Assistant, Agronomy
Alex Martin
Extension Weeds Specialist

1994 NEBRASKA WEED TOUR

The itinerary has been set for the 1994 Nebraska Weed Tour. The tour will begin in eastern Nebraska. The itinerary is:

Monday--June 20th	
1:00 p.m.	Concord-Northeast Research and Extension Center
Tuesday--June 21st	
9:00 a.m.	Lincoln - 84th and Havelock
3:00 p.m.	Clay Center - South Central Research and Extension Center
Wednesday--June 22nd	
8:30 a.m.	North Platte - West Central Research and Extension Center
3:00 p.m. (MDT)	Sidney - High Plains Agricultural Laboratory
Thursday--June 23rd	
8:30 a.m. (MDT)	Scottsbluff - Panhandle Research and Extension Center

Improve dry bean yields by adding nitrogen

Fertilization of dry edible beans can result in significant yield increases when soils are low in available nutrients. Until recently, nitrogen fertilizers were not recommended for dry bean production in Nebraska because this crop is a legume and should need no additional nitrogen as fertilizer. Recent studies, however, have shown significant yield increases to nitrogen fertilizers in soils that are low in available nitrogen.

A study was initiated in 1993 at the Panhandle Research and Extension Center on a soil quite low in available nitrogen (~25 lb/acre in surface 24-inch soil layer). Fertilizer nitrogen was applied at rates ranging from 0 to 120 lb/acre in 30-lb increments. Yields were increased by 500 lb/acre as fertilizer nitrogen rates increased from 0 to 60 lb/acre; there was no further increase in yields above 60 lb/acre.

Why do dry beans seem to respond to applications of fertilizer nitrogen on soils that are low in available nitrogen? Probably because dry beans are extremely inefficient fixers of nitrogen. It is likely that when soils are low in available nitrogen, significant dry bean yield increases can be obtained by applying fertilizer nitrogen. General recommendations for nitrogen are to sample the 0- to 30-inch soil layer and apply fertilizer nitrogen if less than 100 lb/acre of nitrogen is present. Apply enough nitrogen so the sum of the nitrogen in the soil plus the fertilizer is equal to 100 lb N/acre.

Phosphorus fertilization of dry beans is recommended when soil test levels are low (i.e., less than 16 ppm Bray P or 8 ppm Olsen P). Banded applications of phosphorus fertilizers are usually more efficient than broadcast applications. Using the planter to band the fertilizer near the row is an excellent method of applying phosphorus for dry beans.

The only other nutrients of concern in most dry bean-producing areas of Nebraska are zinc and iron. Soils that are low in organic matter and high in pH (greater than 7.3) tend to be the most susceptible to zinc and/or iron deficiencies. There is also evidence to suggest dry beans may be more prone to zinc deficiencies when following sugar beets. If the DTPA soil test level is less than 1 ppm, zinc fertilization is recommended for dry beans.

If dry beans have historically shown symptoms of iron deficiency (chlorosis) on a field, soil-applied iron fertilizers are not recommended. Three strategies can be used to manage these problem fields. The first is proper variety selection. There are differences in the ability of dry bean varieties to tolerate iron chlorosis problems. Fortunately, most dry bean varieties grown in Nebraska were developed in this region and tend to have good tolerance to iron chlorosis. Secondly, application of foliar fertilizer that contains iron, such as iron sulfate, can sometimes result in significant yield responses if applied at the right time and usually more than once. It is important to remember that the greater the symptoms of iron chlorosis, the harder it is to correct the problem. Foliar fertilizers should be sprayed as soon as symptoms begin to appear. The third strategy is to grow a crop other than dry beans that is not as sensitive to iron chlorosis.

For detailed fertilizer recommendations on dry beans see NebGuide G92-1102-A "Fertilizer Management for Dry Edible Beans".

Gregory D. Binford
Soil Fertility Specialist

Scout for cutworm injury to corn

Based on moth captures in pheromone traps, larval injury to corn from the black cutworm moth is expected to be light this year in eastern Nebraska. Exceptions are in Burt and Hamilton counties, where unusually high numbers during the first week of May justify concern. Particular attention should be paid to fields along the Missouri and Elkhorn rivers in northeastern Nebraska.

Black cutworms, if present, are predicted to be able to cut plants beginning the last week of May through early June. Field scouts are urged to carefully check fields after corn emergence through the four-leaf stage. Plants maturing past the four-leaf stage are less prone to cutting. Newly emerged plants with ragged holes chewed into leaves usually signal cutworms, and often serve as an early warning of more severe damage. Rescue treatment is advised when 5% or more cutting damage (one plant in 20) is observed and the cutworms are less than 1 inch long. Appropriate insecticides include Ambush 2E, Asana XL, Lorsban 4E and Pounce 3.2EC.

While performance of Lorsban 4E can be enhanced by incorporation with a rotary hoe before or after application, the other products, being pyrethroids, should not be incorporated.

Also be alert to other cutworms, such as dingy, darksided and claybacked cutworms, which may damage corn as soon as plants have emerged. These species overwinter as partly grown larvae and generally feed on weedy plants or in alfalfa or pastures. Corn planted no-till, or into ground previously in alfalfa or pasture can be severely damaged even where conventional tillage was involved.

Jim Kalisch, Extension Entomology Technologist

Replant options following herbicide use available

Crop damage from flooding, hail or insects may cause farmers to consider replanting. Replanting options vary according to what herbicides were applied. The following table lists replant options based on our judgment for various herbicides with the time delay required between application and planting. These estimates can be influenced by several factors including application rate, soil organic matter content and pH. Use herbicides only "as needed" on the replant crop. **John McNamara, Ext. Asst, Agronomy, Alex Martin, Extension Weed Specialist**

Herbicide	Replant Crops	Time Delay
Accent	Corn	None
Atrazine	Corn, Sorghum	None
Banvel - Clarity	Corn, Sorghum	15-30 days (depending on rate)
Beacon	Corn	None
Bicep/Bicep II	Corn, Sorghum (safened seed)	None
Bladex	Corn	None
	Sorghum, Soybeans	15-30 days (depending on rate)
Broadstrike + Dual	Corn, Soybeans	None
Broadstrike + Treflan	Soybeans	None
Buctril/Atrazine	Corn, Sorghum	None
Bullet	Corn, Sorghum (safened seed)	None
Cycle	Corn	None
	Sorghum (safened seed)	0-15 days
Dual/Dual II	Corn, Sorghum (safened seed)	None
	Soybeans	None
Eradicane	Corn	None
	Sorghum	30 days
	Soybeans	10-15 days
Extrazine II	Corn	None
	Sorghum	15-30 days (depending on rate)
Frontier	Corn	None
Guardsman	Corn	None
Harness Plus	Corn	None
Herbicide	**Replant Crops**	**Time Delay**
Laddok	Corn, Sorghum	None
Lasso	Corn, Sorghum (safened seed)	None
	Soybeans	None
Lariat	Corn, Sorghum (safened seed)	None
Marksman	Corn	None
	Sorghum	30 days
Micro-Tech	Corn, Soybeans	None
Princep	Corn only	None
Prowl	Soybeans, Sunflowers	None
Pursuit	Corn (IR, IT), Soybeans	None
Pursuit Plus	Soybeans	None
2,4-D	Corn	0-7 days
	Sorghum	7-10 days
	Soybeans	7-30 days
Ramrod	Corn, Sorghum, Soybeans	None
Sutan	Corn	None
	Sorghum	30 days
	Soybeans	10-15 days
Surpass	Corn only	None
Tough	Soybeans/Sorghum	None

Warm, dry weather results in quicker plantings

The Climate Assessment Response Committee (CARC) meeting scheduled for May 17, 1994 was postponed. Rains occurred across eastern Nebraska two days before the scheduled meeting. Members decided to see if the rains would continue and end short-term precipitation deficits. The rains, however, turned out to be spotty across the state and failed to end this spring's dry spell. The atmosphere is again signalling the potential for another period of dry weather. Therefore, committee members have decided to meet the first week of June to discuss and decide how to respond to developing dry conditions.

An upper air block developed over the midwest during the past two weeks. The pattern broke down temporarily, but new models indicate the block may redevelop as soon as this weekend. In general, farmers east of the Panhandle can expect above normal temperatures with little rainfall through this weekend. The entire state can expect temperatures to move toward the mid-to-upper 90's if the block lasts for more than five days.

Because of last week's relatively dry weather, planting has progressed rapidly. As of May 15, statewide corn planting is complete, soybean planting is at 71%, and sorghum planting is at 50%. With soil temperatures pushing into the mid 70's and dry conditions expected to continue, soybean and sorghum planting should be nearly complete by the end of this week. Surface moisture is reported short in all districts, but adequate subsoil moisture is available east of the Panhandle. A general 1/2- to 1-inch rain across the state would insure good emergence stands and activate chemical applications.

Al Dutcher
State Climatologist
Ag Meteorology

Soil temperature summary

Seven-day summary ending May 22

	Ave	*Norm.*	*Hi/Day*	*Lo/Day*	*Last Read*
Ainsworth	76.0	64.2	78./6	73./1	78.3
Alliance West	68.3	6.7	71./3	65./7	65.1
Arthur	70.2	61.6	71./6	69./1	70.0
Beatrice	67.2	66.3	71./7	63./1	71.0
Central City	66.8	66.8	69./7	64./1	68.7
Clay Center(SC)	68.7	66.0	70./7	66./1	70.4
Concord (NE)	67.1	65.4	69./7	66./1	69.0
Curtis UNSTA	70.2	64.8	72./7	68./1	71.7
Elgin	66.6	64.5	68./7	64./1	68.3
Gordon	66.4	61.0	69./3	64./7	64.1
Grant	72.9	65.4	74./6	71./1	72.8
Holdrege	70.6	65.6	72./4	67./1	71.2
Lincoln IANR	73.3	66.9	76./7	69./1	76.0
McCook	71.0	65.6	73./7	69./1	73.1
Mead	65.1	66.7	68./7	62./1	68.0
North Platte	71.7	63.9	73./6	70./1	72.2
O'Neill	65.8	64.4	68./7	63./1	67.8
Ord	71.8	64.8	73./4	69./1	72.9
Red Cloud	73.4	66.5	76./7	70./1	76.5
Rising City	79.1	66.6	82./7	74./1	81.6
Scottsbluff	71.8	62.6	73./5	70./1	71.4
Shelton	66.8	66.2	69./7	63./1	69.2
Sidney	68.5	61.2	70./7	66./4	69.6
Tarnov	68.8	65.3	71./7	66./1	70.6
West Point	65.1	65.8	67./7	62./1	66.5

At 4 inches

Growing degree day accumulations

as of May 22

	Celsius		*Fahrenheit*			
	*Base 0**		*Base 40***		*Base 48****	*Base 50*****
Accumulated from	*3/1*	*4/1*	*3/1*	*4/1*	*1/1*	*5/1*
Ainsworth	816	623	998	770	719	306
Alliance	808	607	1001	754	721	287
Arthur	833	621	1024	764	721	288
Beatrice	923	686	1115	834	825	291
Central City	874	671	1055	813	781	307
Clay Center	871	656	1041	790	772	294
Concord	786	619	927	741	654	275
Curtis	888	654	1092	800	810	300
Elgin	807	623	951	749	682	287
Gordon	766	595	939	740	633	283
Grant	859	633	1053	771	776	304
Holdrege	901	662	1097	804	808	296
Lincoln	951	709	1142	861	848	311
McCook	946	687	1172	849	890	324
Mead	862	650	1037	786	784	296
North Platte	868	636	1078	783	794	298
O'Neill	781	604	937	731	676	285
Ord	832	634	1012	775	746	293
Red Cloud	923	679	1125	833	827	288
Rising City	857	656	1023	789	734	287
Scottsbluff	859	643	1073	803	814	313
Shelton	898	681	1086	828	801	312
Sidney	815	602	1008	744	750	281
Tarnov	821	627	989	764	707	281
West Point	842	652	999	779	735	299

*Recent research on winter wheat development uses the 0 (32°F) base.
**Base 40 has traditionally been used to track winter wheat development.
***Base 48 is used to track alfalfa weevil development.
****Base 50 is used to track corn, sorghum and soybeans.